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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/821,767	04/09/2004	Michael Tolbert Myers	SHEL.110604 / TH2478	1457
23632	7590	10/31/2005	EXAMINER	
SHELL OIL COMPANY P O BOX 2463 HOUSTON, TX 772522463			SAINT SURIN, JACQUES M	
			ART UNIT	PAPER NUMBER
			2856	
DATE MAILED: 10/31/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

H.A

Office Action Summary	Application No. 10/821,767	Applicant(s) MYERS ET AL.	
	Examiner Jacques M. Saint-Surin	Art Unit 2856	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 4/15/04, 8/19/05, 4/19/04, 4/09/04.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 11, 12, 14, 15, 17, 18, 20-25 and 31-33 is/are rejected.
- 7) ☒ Claim(s) 6-10, 13, 16, 19 and 26-30 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>4/04, 8/05</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the chamber 300 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

3. Claims 1, 14, 20, 31 and 33 are rejected under 35 U.S.C. 102(e) as being anticipated by Coupland et al. (US Patent 6,912,891).

Regarding claim 1, Coupland discloses an apparatus for acoustically analyzing a fluid comprising:

a chamber (Fig. 8 shows a chamber for holding fluid) for holding the fluid;

a transmitter (Fig. 8 shows a transducer within the chamber) positioned within the chamber for transmitting an acoustic signal through the fluid;

a reflector (Fig. 8 shows a delay line) moveably positioned within the fluid for reflecting the acoustic signal;

and a receiver Fig. 8 shows a transducer) positioned within the chamber for detecting a reflection of the acoustic signal.

Regarding claim 14, it is similar in scope with claim 1 and therefore, it is rejected for the reasons set forth for that claim. Furthermore Fig. 8 shows an alternate transducer arrangement wherein the transducer is coupled to the chamber as required by the claim. Fig. 10a shows a signal generator coupled to the chamber.

Regarding claims 20, 31 and 33, they are similar in scope with claim 1 and therefore, they are rejected for the reasons set forth for that claim.

Regarding claims 5, 21-23 and 25, Coupland shows in Fig. 8 a transducer within the chamber and transmits and receives signal. Furthermore, Coupland discloses an electrical spike signal was passed to a broadband ultrasonic transducer which converted the energy ultrasound. Therefore, the transducer of claim 8 is inherently a piezoelectric transducer. Regarding claim 23, Coupland discloses the reflector (delay line) is a small object usually similar in size and shape to the transducer being used (e.g., disc like).

Regarding claims 25 and 32, Coupland discloses the present invention is concerned solely with the use of ultrasonic reflectance from (and not transmittance through) the sample being investigated. This sensing modality enjoys all of the advantages of conventional ultrasonic transmission (i.e., velocity and attenuation) measurements, see: col. 7, lines 17-23. Coupland further discloses an oscillating force was applied to the tube and the frequency of resonance measured. The resonance

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properties of the filled tube depend on its mass and, since the tube volume was known, the density of the fluid could be measured to very high precision, see: col. 8, lines 4-9.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 2-4 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Coupland et al. (US Patent 6,912,891) in view of Brown et al. (US Patent 6,467,544).

Regarding claims 2-4 and 15, although Coupland shows in Fig. 8 a chamber which comprises a sealed first end, a motor, however, it does not disclose a piston slidably disposed within a second end of the chamber and a conduit for introducing the

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fluid into the chamber. Brown discloses the sample module includes a chamber for receiving and storing fluid, and a piston slidably disposed in the chamber (see: col. 3, lines 21-23). It would have been obvious to one having ordinary skill in the art at the time of the invention to utilize in Coupland the slidable piston of Brown because it would define a sample cavity and a buffer/pressurization cavity, the cavities having variable volumes determined by movement of the piston thereby obtaining effectively the pressurization cavity to control the pressure of the collected sample fluid in an efficient manner.

7. Claims 11-12 and 17-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Coupland et al. (US Patent 6,912,891) in view of Chung et al. (US Patent Re 33,837).

Regarding claims 11 and 17 Coupland does not disclose first and second electromagnetic coils being independently driven for manipulating the reflector. Chung discloses More particularly, rods 66 and 70 may, for example, be prestrained by corresponding permanent magnets 120 and 122 carried above them in reflector 76 alternatively electromagnetic coils may be substituted for magnets 120 and 122 in some applications in which permanent magnets might be prohibitively bulky), see: col. 11, lines 63-68. It would have been obvious to one of the ordinary skill in the art at the time of the invention to utilize in Coupland the electromagnetic coils of Chung because whereas magnetostrictive material having a positive strain constant will elongate (and magnetostrictive material having a negative strain constant will contract) with magnetization independent of the sign (positive or negative) of the magnetic

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field applied, the amount of such movement is related to the absolute magnitude of the applied magnetic field thereby making the above combination able to drive or manipulate the reflector effectively.

Regarding claims 12 and 18, Coupland discloses the present invention is concerned solely with the use of ultrasonic reflectance from (and not transmittance through) the sample being investigated. This sensing modality enjoys all of the advantages of conventional ultrasonic transmission (i.e., velocity and attenuation) measurements, see: col. 7, lines 17-23. Coupland further discloses an oscillating force was applied to the tube and the frequency of resonance measured. The resonance properties of the filled tube depend on its mass and, since the tube volume was known, the density of the fluid could be measured to very high precision, see: col. 8, lines 4-9.

8. Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Coupland et al. (US Patent 6,912,891) in view of Lynnworth (US Patent 5,515,733).

Regarding claim 24, Coupland does not disclose the reflector is a ring positioned opposite to the transducer relative to the piston. Lynnworth discloses a back-up seal consisting of an attenuating O-ring of silicone or fluorosilicone may be captured between the transducer housing and the nearby cylindrical wall, see: col. 5, lines 28-30. It would have been obvious to one having ordinary skill in the art at the time of the invention to utilize in Coupland the ring of Lynnworth because this assures that the acoustic path between the transducer and the transducer's point of attachment to the conduit passes through an alternating series of massive elements in an efficient manner.

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Allowable Subject Matter


8. Claims 6-10, 13, 16, 19 and 26-30 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

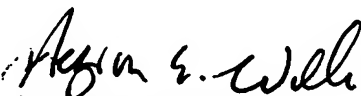
Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jacques M. Saint-Surin whose telephone number is (571) 272-2206. The examiner can normally be reached on Mondays through Fridays 10:30 A.M. -7:00 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron Williams can be reached on (571) 272 2208. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Jacques M. Saint-Surin
October 27, 2005


HEZRON WILLIAMS
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